

## WHAT IS CLAIMED IS:

1. An electron beam exposure apparatus for exposing wafer by using an electron beam, comprising:

an electron beam generator operable to generate said electron beam;

a wafer stage operable to hold said wafer to be exposed;

a current detector, provided on said wafer stage, operable to detect a current of said electron beam; and

a storage unit, provided on said wafer stage, operable to store information indicating said current detected by said current detector.

2. An electron beam exposure apparatus as claimed in claim 1, wherein said current detector includes a Faraday cup.

3. An electron beam exposure apparatus as claimed in claim 1, further comprising a signal processor, provided on said wafer stage, operable to convert said current detected by said current detector to a digital signal and to output said digital signal to said storage unit.

4. An electron beam exposure apparatus as claimed in claim 3, wherein said signal processor includes:

an IV converter operable to convert said current detected by said current detector to a voltage; and

an AD converter operable to convert said voltage to said digital signal and to output said digital signal to said storage unit.

5. An electron beam exposure apparatus as claimed in claim 3, further comprising a substrate provided in such a manner that said substrate is attachable and removable to/from said wafer stage, said current detector, said signal processor and said storage unit being provided on said substrate.

6. An electron beam exposure apparatus as claimed in claim 1, further comprising a first condenser, provided on said wafer stage, operable to accumulate power for operating said current detector and said storage unit.

7. An electron beam exposure apparatus as claimed in claim 6, further comprising a charging unit operable to charge said first condenser.

8. An electron beam exposure apparatus as claimed in claim 7, further comprising:

- a chamber operable to accommodate said wafer stage and said charging unit;

- a shutter operable to divide a space within said chamber into a first space for accommodating said wafer stage and a second space for accommodating said charging unit;

- a first pump operable to decrease a pressure in said first space;

- a second pump operable to decrease a pressure in said second space; and

- an attaching/removing unit operable to remove said first condenser from said wafer stage and attach said first condenser to said charging unit.

9. An electron beam exposure apparatus as claimed in claim 8, further comprising a second condenser operable to accumulate power for operating said current detector and said storage unit, wherein

said attaching/removing unit removes said first condenser from said wafer stage and attaches said first condenser to said charging unit, and removes said second condenser from said charging unit and attaches said second condenser to said wafer stage.

10. An electron beam exposure apparatus as claimed in claim 1, further comprising a communication unit operable to communicate said information stored in said storage unit; and

an electron beam controller operable to control an output of said electron beam generator based on said information obtained via said communication unit.

11. An electron beam measurement module for measuring a current of an electron beam, comprising:

a current detector operable to detect said current of said electron beam;

a storage unit operable to store information indicating said current detected by said current detector; and

a substrate on which said current detector and said storage unit are mounted.

12. An electron beam measurement module as claimed in claim 11, further comprising:

an IV converter, mounted on said substrate, operable to convert said current detected by said current detector to a voltage; and

an AD converter, mounted on said substrate, operable to convert said voltage to a digital signal and to output said digital signal to said storage unit.

13. An electron beam measurement module as claimed in claim 12, further comprising a condenser, mounted on said substrate, operable to accumulate power for operating said current detector, said IV converter, said AD converter and said storage unit.